

IN THE SPECIFICATION:

Please amend paragraph [0001] as follows:

[0001] Field of the Invention: The present invention relates generally to vapor and gas delivery systems ~~and more particularly and, more particularly,~~ to the heating of a gas line body feedthrough used in a vapor delivery system such as a chemical vapor deposition chamber or an atomic layer deposition chamber.

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Please amend paragraph [0002] as follows:

[0002] State of the Art: Modern semiconductor processing equipment, specifically chemical vapor deposition (CVD) and atomic layer deposition (ALD) systems, are migrating to the use of organometallic precursors such as tantalum tetraethoxide dimethylamino ethoxide (TAT-DMAE) as well as halogen-metallic chemistries such as TiCl_4 and others for metal, ~~metal-oxide~~ metal-oxide and metal-nitride film depositions (collectively referred to herein as organometallic precursors). Conventional precursors have typically been delivered in a gas or vapor state thus making them amenable for use in the vapor deposition process, including ease of maintaining the precursors in the vapor state, as they are delivered to the chamber from the vapor source. However, organometallic precursors are typically delivered for use as a liquid and sometimes as a solid. Many of such precursors have low vapor pressures and others exhibit moderate vapor pressures. The organometallic sources are typically vaporized and transported through the delivery plumbing to the process chamber. Conventional methods of vaporization include the use of bubbler ampoules or direct liquid injection systems, which comprise a chemical ampoule, a liquid flow meter, a heated injector, a carrier gas mass flow controller (MFC) and heated vapor delivery lines between the precursor source and the chamber.

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Please amend paragraph [0019] as follows:

[0019] In accordance with yet another aspect of the invention, a method is provided for delivering vapor to a vapor delivery head in a deposition chamber. The method includes providing a source of vapor and defining a vapor delivery path between the source of vapor and

the vapor delivery head. Defining the vapor delivery path includes providing a first section of plumbing between the vapor source ~~at the~~ and the chamber body of the deposition chamber. Additionally, a feedthrough device is provided within a portion of the chamber body and is sealingly coupled to the first section of plumbing. A second section of plumbing is provided between the feedthrough device and the vapor delivery head and is accordingly coupled with the feedthrough device. Vapor is introduced into the vapor delivery path from the vapor source. The first section of vapor plumbing and the feedthrough device are heated to eliminate the potential for condensation of the vapor as it travels through the vapor delivery path.

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Please amend paragraph [0026] as follows:

[0026] The deposition chamber 200 includes a chamber body 202 and a chamber lid 204. The chamber lid 204 is removable from the chamber body 202 for purposes of accessing and maintaining the chamber interior including the chamber cavity 206. A vapor delivery path 207 is formed through the chamber body 202 using a feedthrough device 208 disposed in a bore 209 in the chamber body 202. The vapor delivery path 207 connects to the heated vapor plumbing 210, and an associated vapor source 211, at the lower side of the chamber at one end 212 of the feedthrough device 208. The feedthrough device 208 is also coupled with additional vapor plumbing 216 via the chamber lid 204 at the second end 214 of the feedthrough device 208. The vapor delivery path 207 ultimately leads to a shower, or vapor delivery head 218 for discharging the vapor into the chamber cavity 206 for deposition onto a substrate 220 such as a silicon wafer which is positioned on a susceptor unit 222. The susceptor unit 222 may be mobile to assist in receiving individual substrates 220 from a location exterior ~~the~~ to the deposition chamber 200 and subsequently positioning the received substrate 220 for the deposition process. The susceptor unit 222 may also include heating mechanisms for heating the substrate 220 during the deposition process as will be understood and appreciated by those of ordinary skill in the art.

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Please amend paragraph [0027] as follows:

[0027] It is noted that the deposition chamber 200 is located in an interstitial space such as a plenum 224 and that a barrier 226 separates the deposition chamber 200 from a mechanical or maintenance room 228. As is understood by those of ordinary skill in the art, it is desirable to locate various connections and equipment, such as the heated vapor plumbing 210, in the maintenance room 228 so as to reduce the likelihood of introducing particulates and contaminants within the plenum 224 or an adjacent clean room (not shown).

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Please amend paragraph [0034] as follows:

[0034] Referring to FIGS. 4A and 4B, a feedthrough device 208 configured for cooperative use with the heating device ~~238~~, (~~FIGS. 238~~ FIGS. 2 and 3) is shown. The feedthrough device 208 includes a bore or lumen 252 extending longitudinally therethrough and which forms a part of the vapor delivery path 207. The feedthrough device 208 further includes a shoulder portion 254 at its upper end. The shoulder portion 254 serves to locate and position the feedthrough device 208 within the chamber body 202. Additionally, as seen the FIG. 4B, one or more channels or grooves 256 may be formed in the top and bottom surfaces 254A and 254B of the shoulder portion 254 to accommodate o-rings or other types of seals 230, 232 (see FIG. 2).

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